

OBJECT-ORIENTED INSTRUCTION SET FOR  
RESOURCE-CONSTRAINED DEVICES

Abstract

A resource-constrained device such as a smart card or the like includes memory for storing an application software program comprising an object-oriented, verifiable, platform-independent, type-safe and pointer-safe sequence of instructions. The device can also include a virtual machine implemented on a microprocessor where the virtual machine is capable of executing the sequence of instructions. Each instruction includes an operation code, and each data manipulation instruction is specific to a particular data type. The application program can be stored on a computer-readable medium prior to being received by the resource-constrained device. Methods of using such an application program, including accessing the program over the Internet and downloading it to a smart card, also are disclosed.

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